“CORRELATING SERUM PHOSPHORUS LEVELS AND CAROTID INTIMAL MEDIAL THICKNESS IN PATIENTS WITH CHRONIC KIDNEY DISEASE

ABSTRACT

INTRODUCTION:

Chronic kidney disease (CKD) is emerging. to be an important chronic disease globally.Stroke and cardiovascular disease are the most common causes of death in chronic kidney disease, with a relative risk of 10 to 20 times that of age and sex matched general population. The CKD related risk factors like hyperphosphatemia, hyperparathyroidism, increased FGF-23, anemia play a major role in occlusive coronary, cerebrovascular and peripheral vascular disease. Increased serum phosphate concentration is a significant risk factor for vascular calcification, which is an advanced form of atherosclerosis. But it is not clear whether serum phosphate concentration is associated with arterial wall thickness in CKD. The aim and objective of the study is to assess the effects of serum phosphate on arterial atherosclerosis and to correlate serum phosphate level and carotid intimal medial thickness in chronic kidney disease patients.

MATERIALS AND METHODS:

This was a tertiary care Hospital based Cross sectional Observational study conducted between April 2017 to September 2017 in Government Kilpauk

Medical College and hospital, Chennai. CKD patients diagnosed by KDIGO guidelines stage 3 to 5, ≤50 years were included in the study. Patients diagnosed as Acute Kidney Injury,on Hemodialysis,pts with history of carotid surgery, ischemic heart disease, myocadial infarction and stroke was excluded. Cockcroft Gault formula was used to stage CKD. Serum phosphorous level was measured for all patients. Carotid intimal thickness was measured on both sides and its average taken and compared with serum phosphorous levels.

RESULTS:

50 patients were included in our study, 31 males and 19 females. There were 38 Diabetics, 39 Hypertensives and 17 smokers in our study. There was very strong correlation between CIMT and serum phosphorous in our study (pearson correlation coefficient 0.854**)**. Serum phosphorous level was found to be an independent risk factor for increased CIMT in addition to smoking. Smoking status increases the thickness by 0.297 mm and for every 1 unit increase in serum phosphorus level, the carotid intimal medial thickness increases by 0.684 mm(P value <0.01).

CONCLUSION:

Primary care physicians should be emphasized on checking and correcting serum phosphorous levels in all CKD patients to prevent vascular calcification and progression of arteriosclerosis.

KEY WORDS: CKD – Chronic Kidney Disease; CIMT- Carotid Intimal Medial Thickness; Hyperphosphatemia